



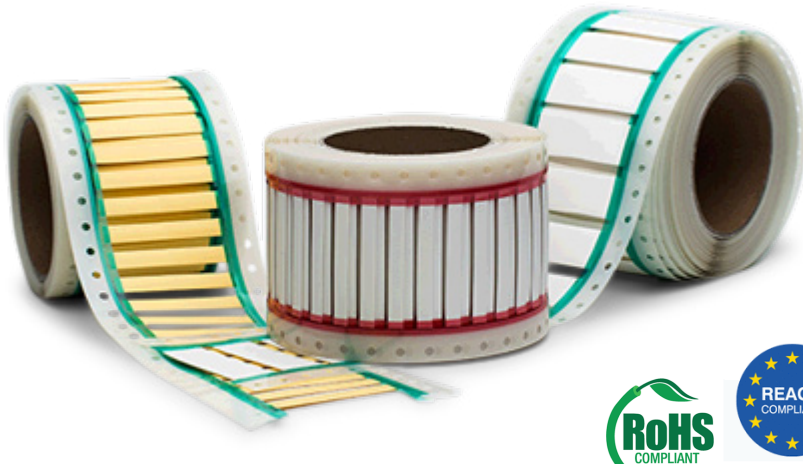
IDENTIFICATION PRODUCTS

AMD

Flame retardant self-extinguishing identification Sleeves

TECHNICAL DATA SHEET

Revision Number. 1
Last Edited 24. juli 2018



The AMD 2X and 3X Heat Shrinkable Wire Markers are made of flame retardant, self-extinguishing flexible heat shrinkable polyolefin tubing with ideal printability properties for identification purposes.

This product is designed for aerospace, military, defence and marine applications where UL224 and SAE-AMS-DTL-23053/5 class 1 & 3 characteristics are required.

For use in wire bundling and assemblies, panel building.

AMD grade identification sleeves meets UL224 VW-1/CSA and AMS-DTL-23053/5 class 1 & 3.

The AMD grade identification sleeve are very versatile through excellent balance of chemical, electrical and mechanical properties.

Industry



Industry



Marine



Wind power



Commercial



Aerospace



Construction



Railway



Military / Defence



Electrical installations



Petrochemical



Telecom

STANDARD TUBE COLOR



OTHER TUBE COLORS ON REQUEST

BACKING TAPE COLORS



MATERIAL

Extruded, cross linked polyolefin.

SHRINK RATIO

2:1 & 3:1

OPERATING TEMPERATURE

-40°C to +135°C
(-40°F to 275°F)

SHRINK TEMPERATURE

>90°C (130°F)

COMPLIANCES

Mark Permanence:

SAE AS-5942 Superceeds

SAE 81531:1998, point 4.6.2

Recommended black ribbon:

FTI-Y, FTI-X

Chemical Resistance to solvents:

AMS-DTL-23053/5

MIL-STD-202G

Test method 215j

INDUSTRY STANDARDS

SAE-AMS-DTL-23053/5 class 1 & 3

FLAMMABILITY

UL224 125°C 600 VW-1

File E203950

CSA 125°C 600V VW-1

File 220127

STORAGE

Cool and dry in original packaging. Recommended temperature at +10°C to +25°C and 45-55% relative humidity. Use within 2 years from date of manufacture.

APPLICATIONS

Specific developed to be used in aerospace, military, defence, marine cable harnesses, marking, insulation, wire bundling and mechanical protection.

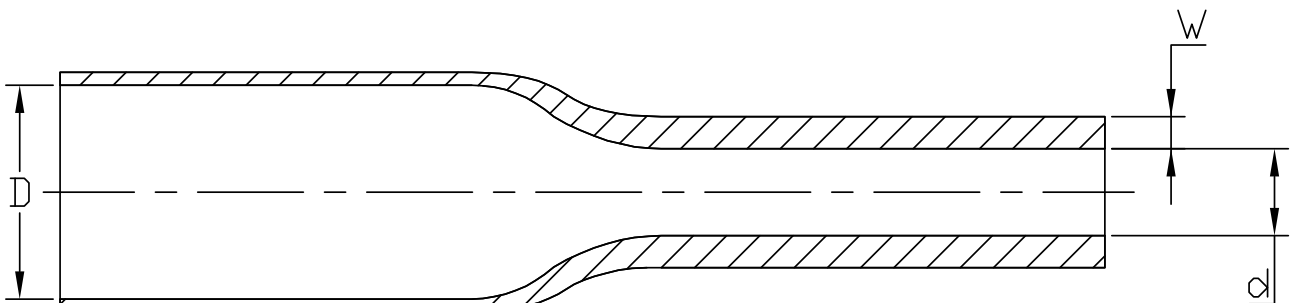
Product Dimensions

DIMENSIONS 2:1

SIZE, INCHES	SIZE, MM	MINIMUM ID (D), AS SUPPLIED MM (INCHES)	MAXIMUM ID, RECOVERED (D) MM (INCHES)	RECOVERED WALL THICKNESS (W), MM (INCHES)
3/32	2.4	2.79 (0.109)	1.18 (0.046)	0.49±0.06 (0.019 ± 0.002)
1/8	3.2	3.64 (0.143)	1.59 (0.063)	0.51±0.06 (0.02 ± 0.002)
3/16	4.8	5.26 (0.207)	2.36 (0.093)	0.54±0.06 (0.02 ± 0.002)
1/4	6.4	6.92 (0.272)	3.18 (0.125)	0.56±0.06 (0.022 ± 0.002)
3/8	9.5	10.2 (0.401)	4.75 (0.187)	0.59±0.06 (0.023 ± 0.002)
1/2	12.7	13.5 (0.531)	6.35 (0.250)	0.60±0.07 (0.024 ± 0.003)
3/4	19.1	20.1 (0.791)	9.53 (0.374)	0.62±0.07 (0.024 ± 0.003)
1	25.4	26.7 (1.05)	12.7 (0.500)	0.63±0.07 (0.025 ± 0.003)
1 ½	38.1	39.8 (1.57)	19.1 (0.750)	0.64±0.07 (0.025 ± 0.003)
2	50.8	53.0 (2)	25.4 (1.0)	0.64±0.08 (0.025 ± 0.003)
3	76.2	79.4 (3)	38.1 (1.5)	0.64±0.09 (0.025 ± 0.003)

DIMENSIONS 3:1

SIZE, INCHES	SIZE, MM	MINIMUM ID (D), AS SUPPLIED MM (INCHES)	MAXIMUM ID, RECOVERED (D) MM (INCHES)	RECOVERED WALL THICKNESS (W), MM (INCHES)
3/32	2.4	2.79 (0.109)	0.79 (0.031)	0.57±0.10 (0.022 ± 0.004)
1/8	3.2	3.64 (0.143)	1.0 (0.039)	0.61±0.10 (0.024 ± 0.004)
3/16	4.8	5.26 (0.207)	1.6 (0.063)	0.67±0.10 (0.0263 ± 0.004)
1/4	6.4	6.92 (0.272)	2.4 (0.094)	0.71±0.10 (0.0279 ± 0.004)
3/8	9.5	10.2 (0.401)	3.2 (0.126)	0.77±0.10 (0.030 ± 0.004)
1/2	12.7	13.5 (0.531)	4.75 (0.187)	0.80±0.10 (0.031 ± 0.004)
3/4	19.1	20.1 (0.791)	6.4 (0.250)	0.84±0.15 (0.0330 ± 0.006)
1	25.4	26.7 (1.05)	8.47(0.333)	0.86±0.15 (0.034 ± 0.006)
1 ½	38.1	39.8 (1.57)	12.9 (0.507)	0.89±0.15 (0.035 ± 0.006)
2	50.8	53.0 (2)	17.2 (0.677)	0.90±0.15 (0.035 ± 0.006)
3	76.2	79.4 (3)	25.8 (1.05)	0.92±0.15 (0.036 ± 0.006)



Heat Shrink Product in as supplied "D" and fully recovered state "d" with recovered wall "W"

General Tests for Identification Products

PHYSICAL

PROPERTIES	TEST METHOD	TYPICAL VALUE
Tensile strength	ASTM D638	10.3 Mpa (min.)
Elongation at break	ASTM D638	≥200%
Longitudinal change	UL224	+/-5%
2% Secant Modulus	SAE-AMS-DTL-23053/5	118MPa
Water absorption	SAE-AMS-DTL-23053/5	0.09 %
Specific gravity	ASTM D 792	1.34g/ cm ³

ELECTRICAL

PROPERTIES	TEST METHOD	TYPICAL VALUE
Dielectric strength	ASTM D876	19.7 kV/mm ² no flashover or dielectric breakdown occurred
Volume resistivity	ASTM D876	≥ 10 ¹⁴ Ω/cm
Voltage Rating	UL224	600 Volt

CHEMICAL

PROPERTIES	TEST METHOD	TYPICAL VALUE
Chemical resistance	AMS-DTL-23053/5	Good
Copper corrosion	SAE-AMS-DTL-23053/5	No corrosion
Copper stability	SAE-AMS-DTL-23053/5	No corrosion
Fluid resistance (23°C, 24h) AMS-DTL-23053	ASTM D638	6.9 Min

THERMAL

PROPERTIES	TEST METHOD	TYPICAL VALUE
Heat shock 4 hours at 250°C	AMS-DTL-23053/5	No dripping, cracking or flowing
Elongation after heat aging 168 hours at 175°C	ASTM D 638	Elongation 100%
Flammability	UL224 VW-1 - ASTM2671-13 Section 68 - SAE-AMS-DTL 23053/5A	Pass » Flame retardant
Low temperature flexibility / bending	ASTM D2671- SAE-AMS-DTL-230537/5	No cracking - pass